

From the INTERNATIONAL BUREAU

PCTNOTIFICATION CONCERNING
TRANSMITTAL OF COPY OF INTERNATIONAL
PRELIMINARY REPORT ON PATENTABILITY
(CHAPTER I OF THE PATENT COOPERATION
TREATY)

(PCT Rule 44bis.1(c))

To:

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Date of mailing (<i>day/month/year</i>) 21 September 2006 (21.09.2006)		
Applicant's or agent's file reference ILL04-029-WO		IMPORTANT NOTICE
International application No. PCT/US2005/008008	International filing date (<i>day/month/year</i>) 10 March 2005 (10.03.2005)	
Priority date (<i>day/month/year</i>) 10 March 2004 (10.03.2004)		
Applicant THE BOARD OF TRUSTEES OF THE UNIVERSITY OF ILLINOIS et al		

The International Bureau transmits herewith a copy of the international preliminary report on patentability (Chapter I of the Patent Cooperation Treaty)

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Authorized officer Beate Giffo-Schmitt
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PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference ILL04-029-WO	FOR FURTHER ACTION	See item 4 below
International application No. PCT/US2005/008008	International filing date (<i>day/month/year</i>) 10 March 2005 (10.03.2005)	Priority date (<i>day/month/year</i>) 10 March 2004 (10.03.2004)
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237		
Applicant THE BOARD OF TRUSTEES OF THE UNIVERSITY OF ILLINOIS		

1.	This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 <i>bis</i> .1(a).																								
2.	This REPORT consists of a total of 6 sheets, including this cover sheet. In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.																								
3.	<p>This report contains indications relating to the following items:</p> <table style="width: 100%;"> <tr> <td style="width: 10%; text-align: center;"><input checked="" type="checkbox"/></td> <td style="width: 40%;">Box No. I</td> <td style="width: 50%;">Basis of the report</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. II</td> <td>Priority</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. III</td> <td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. IV</td> <td>Lack of unity of invention</td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>Box No. V</td> <td>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. VI</td> <td>Certain documents cited</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. VII</td> <td>Certain defects in the international application</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. VIII</td> <td>Certain observations on the international application</td> </tr> </table>	<input checked="" type="checkbox"/>	Box No. I	Basis of the report	<input type="checkbox"/>	Box No. II	Priority	<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	<input type="checkbox"/>	Box No. IV	Lack of unity of invention	<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	<input type="checkbox"/>	Box No. VI	Certain documents cited	<input type="checkbox"/>	Box No. VII	Certain defects in the international application	<input type="checkbox"/>	Box No. VIII	Certain observations on the international application
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<input type="checkbox"/>	Box No. VIII	Certain observations on the international application																							
4.	The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).																								

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No. +41 22 338 82 70	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 5px;">Date of issuance of this report 13 September 2006 (13.09.2006)</td> </tr> <tr> <td style="padding: 5px;">Authorized officer Beate Giffo-Schmitt e-mail: pt03@wipo.int</td> </tr> </table>	Date of issuance of this report 13 September 2006 (13.09.2006)	Authorized officer Beate Giffo-Schmitt e-mail: pt03@wipo.int
Date of issuance of this report 13 September 2006 (13.09.2006)			
Authorized officer Beate Giffo-Schmitt e-mail: pt03@wipo.int			

PATENT COOPERATION TREATY

REC'D 20 JUL 2005

From the
INTERNATIONAL SEARCHING AUTHORITY

WIPO PCT

PCT

To:

see form PCT/ISA/220

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/US2005/008008

International filing date (day/month/year)
10.03.2005

Priority date (day/month/year)
10.03.2004

International Patent Classification (IPC) or both national classification and IPC
C03C25/10, C03C25/42

Applicant
THE BOARD OF TRUSTEES OF THE UNIVERSITY OF ...

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:



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**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/US2005/008008

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
 - ☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
 - ☐ a sequence listing
 - ☐ table(s) related to the sequence listing
 - b. format of material:
 - ☐ in written format
 - ☐ in computer readable form
 - c. time of filing/furnishing:
 - ☐ contained in the international application as filed.
 - ☐ filed together with the international application in computer readable form.
 - ☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/US2005/008008

Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-10, 24, 25
	No: Claims	11-23, 26-30
Inventive step (IS)	Yes: Claims	1-10, 24, 25
	No: Claims	11-23, 26-30
Industrial applicability (IA)	Yes: Claims	1-30
	No: Claims	

2. Citations and explanations

see separate sheet

Re Item V.

1 Reference is made to the following documents:

D1: FR-A1-2 827 856

2 Support

Independent claim 1 is not supported over the whole scope of the claim and represents an unreasonable generalisation of what has been achieved (Art. 6 PCT).

Support is to be found for the following :

- the method should include the step of wet impregnation of the fiber with the ceramic precursor
- the ceramic precursor is one of the list of page 7, lines 22-24 of the description.
- the heat treatment may comprise one or two steps, the first step being a heating at 250-600 °C.

3 Conciseness

The application comprises 6 independent method claims, 4 independent product claims and 2 independent apparatus claims. It is considered that this is not in relation with the nature of the invention and therefore that the application lacks conciseness (see PCT Guidelines 5.42(2)). As a consequence, the scope of protection is not clearly defined (Art. 6 PCT).

4 Claim 1

D1 describes a ceramic coated fiber. It is obtained by coating the fiber with a mixture of a ceramic precursor (in particular SiO₂ preferably doped with e.g. Ti) and a polymer by wet impregnation. After several heating steps, including one at 400 °C, the polymer is burnt and the ceramic coated fiber achieved (see page 3, lines 17-20 and example 1).

4.1 As a consequence, claim 1, **restricted to what is supported**, is considered to be novel over the prior art. (Art. 33(2) PCT).

4.2 Claim 1 differs from D1, considered as the closest prior art, in that the fiber already has a coating of activated carbon before applying the ceramic precursor solution.
No technical effect seems to be achieved by this difference (in particular, the BET obtained

are similar).

The problem may therefore only be how to provide further methods of making ceramic coated fibers.

It is considered that it is not obvious for the skilled person to arrive at the solution of claim 1 using D1 and that claim 1 involves an inventive step (Art. 33(3) PCT).

4.3 The same reasoning applies mutatis mutandi to claim 24.

4.4 As claims 2-10 are dependent from claim 1, it is considered that these claims meet the requirements of the PCT concerning novelty and/or inventive step (Art. 33(2) or (3) PCT).

5 Claim 11

The technical features of the fibers obtained by the method of claim 1 (see objection under point 2) seem to be the same as those of the fibers obtained in D1, namely a carbon coated fiber with a ceramic mesoporous layer and a certain BET.

As a consequence, claim 11 is not novel (Art 33(2) PCT).

6 It is considered that claims 12-23, 26-30 do not meet the requirements of the PCT concerning novelty and/or inventive step (Art. 33(2) or (3) PCT).